REMARKS

The above Amendments and these Remarks are in reply to the Office Action mailed January 2, 2003 ("Office Action") and the Advisory Action mailed March 17, 2003 ("Advisory Action") in patent application Serial No. 09/372,879.

Claims 1-3, 12, 23 and 24 have been presently amended. Claims 38-45 have been presently added.

In the Office Action, the Examiner rejected Claims 1-11 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,329,694 ("*Lee*").

Claims 12-22 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Lee*.

Claims 23, 24, 26, 27 and 29-37 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Lee* in view of Japanese Patent No. 60000769 ("*Sakai et al.*").

Claim 28 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Lee* as applied to claim 23 above, and further in view of "Microelectronic Circuits" ("*Sedra et al.*").

An Information Disclosure Statement including a report describing a bond pad structure is provided. Please note the bond pad structure shown in a vertical strip seen in Photograph 1C.

I. Claims 1-11

Independent claim 1 has been amended such that "a conductive region of the first conductivity type, underlying and surrounding the conductive pad, disposed in the first doped region..."

In the Advisory Action, the Examiner stated:

> [I]n figure 14 of the Lee reference, 63 is the conductive pad, and 61 is underlying and surrounding the pad. Furthermore, while Lee is an ESD protection circuit and the Japanese patent a memory circuit, note that by applying the Japanese patent novelty to the ESD protection circuit of Lee, one of ordinary skill in the art could implement the device in Lee reference to a memory related application, while taking advantage of its ESD protection properties. Advisory Action, page 2.

In the Office Action, the Examiner stated *Lee* teaches, by way of Fig. 14, the claimed invention:

> Lee discloses...a first doped region 61 of the first conductivity type disposed in a semiconductor substrate 50 of a second conductive type, underlying and surrounding the conductive pad, a conductive region 65 of the first conductivity type disposed in the first doped region 61; a first tap region 66...Office Action, page 2.

So according to the Examiner's statements, *Lee* teaches 1) source 63 as "a conductive pad", 2) n-well 61 as " a first doped region," and 3) pick-up 65 as "a conductive region."
However, amended claim 1 clearly calls for "a conductive region...underlying and surrounding the conductive pad." Pick-up 65 is clearly not "underlying and surrounding" source 63.

Claim 2 depends from claim 1 and is therefore patentable for at least the same reasons described above.

Further, claim 2 calls for "the conductive pad includes a metal." Source 63 as taught by Lee clearly does not include "a metal."

Claims 3-11 depend from independent claim 1 and are therefore patentable for at least the same reasons described above. While only certain limitations or elements of particular claims are discussed, no inference or conclusion of any kind should be drawn from the absence of comments pertaining to other limitations or elements.

Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 1-11 under 35 U.S.C. §102(e) as being anticipated by *Lee*.

II. Claims 12-22

The Examiner rejected claims 12-22 stating:

> Lee discloses the bond pad comprising conductive bonding layers 63-65, a first doped region 61 of the first conductivity type formed in a semiconductor substrate 50 of a second conductive type, underlying and surrounding the conductive bonding layer; a conductive region 65 of the first conductivity type disposed in the first doped region ...Office Action, page 4.

The Examiner also stated:

> Lee does not disclose the surface region 65 substantially equal to the surface area of the conductive area of the conductive bonding layer. Note that by enlarging region 65 in order to equalize it with the conductive bonding region, region 65 would have to be enlarged to the extent that it would have make a direct connection to 64. [S]ince [sic] 64 and 65 are shorted together, the direct connection would have been another method to short these 64 and 65 together. Lee discloses at column 3, lines 8-12, that instead of metal strapping, the shortening of the layers can be carried out directly by using semiconductor material. Office Action, pages 4-5.

Claim 12 calls for "the conductive region is underlying and surrounding the conductive bonding layer."

Like the rejection of claim 1, pick-up 65 is not "underlying and surrounding" source 63 and drain 64. Further, the Examiner appears to be improperly using pick-up 65 to teach two distinct claim elements: "a conductive bonding layer" and "a conductive region."

Claims 13-22 depend from independent claim 12 and are therefore patentable for at least the same reasons described above.

Claim 13 also calls for "the conductive bonding layer includes a metal." In rejecting claim 13, the Examiner stated "see column 4, lines 40-55." However, column 4, lines 40-55 do not teach such a limitation. There is no teaching of source 63, drain 64 or pick-up 65 including "a metal." *Lee* teaches metal strapping n-well guard 16 and pick-up 15.

Also, the Examiner admits that *Lee* does not teach, "the conductive region includes a surface area at least substantially equal to a surface area of the conductive bonding layer," as called for in claim 12. The Examiner states that pick-up 65 can be enlarged to make a direct contact with drain 64 to teach this limitation. The stated motivation for doing so is to eliminate metal strapping. However, the Examiner has inconsistently argued that *Lee* teaches using "metal" in rejecting dependent claim 13. Thus, the Examiner is improperly rejecting independent claim 12 and dependent claim 13 using contradicting reasoning.

Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 12-22 under 35 U.S.C. §103(a) as being unpatentable over *Lee*.

III. Claims 23-37

Amended independent claim 23 calls for "the bonding pad including a metal" and therefore is patentable for at least the same reasons stated above.

Claims 24-37 depend from independent claims 23 and 1 and are therefore patentable for at least the same reasons stated above.

Accordingly, it is respectfully requested that the Examiner withdraw the rejection of Claims 23-37 under 35 U.S.C. §103(a).

IV. New claims 38-45

The present application teaches an I/O structure "adjusted to tune the frequency response of the I/O structure to that of a signal line of the high speed bus." Specification page 13, lines 13-15; page 22, lines 13-16. Further support for the claims can be found at page 6, line 5; page 17, lines 6-10; and page 19, lines 4-13.

The cited art does not teach "the first resistance and second resistance are selected to provide a second frequency response of the bond pad structure that substantially matches the first frequency response" as called for in claim 1.

The cited art also does not teach the further limitations found in dependent claims 39-45.

V. Conclusion

Based on the above amendments and these remarks, reconsideration of claims 1-37 and consideration of claims 38-45 is respectfully requested.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 501826 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

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